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REPORT
OF THE
BOARD OF MANAGERS
OF THE
LEHIGH COAL AND NAVIGATION
COMPANY,
PRESENTED TO THE
STOCKHOLDERS,

JANUARY 17, 1831.

Philadelphia:

AT an election held on the 10th January, 1831, the following named persons were duly chosen officers of the Company for the ensuing year :

President,

JOSEPH WATSON, Esq.

Managers.

JOSIAH WHITE,
ERSKINE HAZARD,
TIMOTHY ABBOTT,
THOMAS EARP,
EPHRAIM HAINES,

JOHN COOK,
GEORGE PETERSON,
JONATHAN K. HASSINGER,
EVAN ROGERS,
JOHN M'ALLISTER.

Treasurer,

OTIS AMMIDON.

REPORT OF THE BOARD OF MANAGERS.

THE Managers of the Lehigh Coal and Navigation Company, again respectfully offer to the Stockholders, their Annual Report and Statement of the concerns committed to their charge.

They have the pleasure to announce to the Stockholders, that the whole line of Canal and the works connected with it, from Mauch Chunk to Easton, are in good order and fit for immediate operations in the Spring. Only a single breach of any importance has occurred during the past season, and from the substantial manner in which the work has been finished, the Managers hope that similar occurrences will be rare.

The tolls of the present year amount to \$45,360.50, of which \$2,775.50 has been received on other articles than our Coal.

We have brought to market the present year 43,000 tons of Coal; of which 19,238 tons have been exported from Philadelphia, 7,615 tons have been sold to customers on the Lehigh and Delaware, and 12,500 tons in Philadelphia and its vicinity. The total quantity falls considerably short of what was anticipated by the Managers in their last Report, and is to be accounted for in part, by the very low state of water in the channels of the Delaware, during the latter part of the Summer, and by the necessity that existed (as mentioned in our last Report) of completing the Dam and outlet Lock at Easton, for the purpose of connecting our works with the Delaware Canal. This occasioned a suspension of Coal business for ten weeks during the season of low water. Advantage was taken of this circumstance, however, to complete some improvements in the Locks in the neighborhood of Mauch Chunk, which, although perhaps not immediately necessary, yet, if not done, would have occasioned a similar interruption at no very distant and more inconvenient time.

Advantage was also taken of the same period, by removing obstruc-

tions from, and deepening the Pool immediately above Mauch Chunk, and by raising the Dam at that place.

The Managers have to regret that they were disappointed in the aid they expected to receive in their business during the latter part of the season, by the Morris and Delaware Canals; and notwithstanding the great exertions used to complete these important lines of Navigation, they still remain not quite finished, but so far done as to leave no reasonable doubt that we shall have the use of them during the greater part of the ensuing season. The consequence has been that we have derived no benefit from our own Canal, notwithstanding we have been subject to the payment of interest on its cost, being obliged to make use of arks, adapted to the Delaware channels, which cost about as much to take them through the Canal as would have navigated them down the old channels of the Lehigh.

The whole interest now paid on the cost of the Canal, has been borne by the small amount of business done; which being but a trifling proportion of what is reasonably contemplated, affords a pleasing anticipation of prospects shortly to be realized.

In the Acting Manager's Report, it will be seen that the cost of Coal this season has been considerably decreased, and it will be found that the cost will continue to decrease, as the quantity brought to market increases, since many of the expenses will be the same in a large or small business.

After due enquiry on the subject, the Managers take this opportunity of saying that they sincerely believe, that our Coal has been brought to market under all its present disadvantages, as cheap, or cheaper than from any other quarter; while at the same time they have ample proof of its being preferred wherever the most extensive purposes for its use exist, even at an advanced price.

It is with great pleasure that we are apprised of the actual commencement of the Delaware and Raritan Canal and Rail Road, and of the Camden and Amboy Rail Road: these routes of communication when finished, will open a new and extensive market for our Coal, and in connection with the Morris Canal, will afford ample means of reaching the tide waters of New York on the most reasonable terms.

Since our last Report a discovery has been made of immense masses of Coal on the north side of the Mauch Chunk mountain, near Room Run, at a distance of about four miles from the Lehigh; and after strict examination as to the quantity and quality of Coal contained in these mines, they have been thought so highly important to the immediate and future interests of the Company, that the Managers have felt justified in directing the Acting Manager to connect them with the Mauch Chunk Pool, by extending a Rail Road between those points, and thus saving four miles of the transportation. This Rail Road will accommodate the increase of our business, and it is believed by the Managers, that its whole cost will be saved by the business of the present year, taking into consideration the additions which would have been required to the old Rail Road, to get down 100,000 tons, and the saving in the transportation from the new mines. By continuing to work the old mines to a sufficient extent to keep things in order there, we shall always be prepared to meet a sudden demand to any extent, by employing a number of common laborers, which could not be done if we depended altogether on mining at the new beds.

The Managers think it not inappropriate on the present occasion, to bring to the view of the Stockholders, some remarks recently published by Professor Silliman, in the American Journal of Science and Arts, (vol. 19th) touching the quality and quantity of the Coal at Room Run just spoken of. The scientific character of the Professor, and the disinterested manner in which he has thus publicly stated his views, render them worthy of particular notice. "The Beds," he says, "are of the respective thicknesses of fifty, fifteen, fifteen, twelve, and twenty-eight feet, making, collectively, one hundred and twenty feet of solid Coal: of the five other beds, two are stated to afford Coal, one fifteen feet, and another thirty-nine feet; it is thus ascertained that one hundred and seventy-four feet of Coal have been added to the resources of the Company; and when the remaining beds shall be perforated, there can be no doubt that the entire thickness will exceed two hundred feet, which is almost three times that of the great mine at Mauch Chunk. This Coal appears to be of the first quality, and some of it, in the high lustre and perfection of its fracture, exceeds any thing I have else-

where seen." He then proceeds to say—"If there could be any doubt before as to the sufficiency of the Company's resources, (which certainly could never have been the fact upon any rational view) there cannot now be any hesitation in saying that their mines are entirely inexhaustible." He then adds in a note, that "since this was written, a letter has been received from Mr. White, in which it is stated that eight beds have been discovered since our visit—these are of nineteen, ten, five, twenty, eleven, six, five and five feet, and the aggregate now ascertained in this valley, is two hundred and forty feet, being more than four times the thickness of the great mine at Mauch Chunk."

Orders have been given to the Acting Manager, and arrangements are making to bring to market 100,000 tons of Coal for the present year.

In the fulfilment of a favorite plan intended to be carried into effect whenever the completion of the Lehigh and Delaware Canals should open an uninterrupted communication between Mauch Chunk and tide-water, the Managers intend to offer for sale lots of ground in the valley of the Nesquihoning, on the north side of the mountain opposite the newly discovered mines; and also on the Kettle tract, east of the Lehigh, both of which situations offer advantageous scites for town plots. It is their further intention to dispose of all their buildings and lots in the town of Mauch Chunk, except such as are necessary for the Company's purposes in the prosecution of an extensive Coal business. It is not doubted that intelligent and enterprising individuals, will at once appreciate the future advantages to be derived by a location on the scites above mentioned. The lots in Nesquihoning furnish residences for the miners, very convenient to their work. The town can be supplied with abundance of good water from Room Run, and with a water-power of sufficient magnitude for local purposes from the Nesquihoning.

The town of Mauch Chunk situated at the head of the Canal Navigation, and in the midst of an immense Coal business, supplied with a large water power from the Lehigh, with ample landings for stores, and plenty of excellent water for domestic purposes, affords every thing that is necessary for an extensive manufacturing and commercial settlement. Both of these town plots are within thirty-two miles of the Susquehanna, by the Berwick Turnpike.

In the recent minute and able Report of the Canal Commissioners to the Legislature, they state the Lehigh Canal "to be of the most substantial character, and to do high credit to the enterprise of the Company at whose expense it was constructed; and to the science and economy of the engineers and officers who had charge of the work." They also state that "the Delaware division may be fairly considered an extension of it, and that the latter must derive its principal income from the transportation which must pass down the Lehigh Canal."

The Managers still entertain a settled belief, that the great water communication north of the Blue Mountain, and between the Delaware and Susquehannah, will eventually be by the Nescopeck and the Lehigh, and that the rapidly increasing products of the Susquehannah and its tributary streams will, to a great extent, be poured through this channel into the Philadelphia, and New York markets, on terms which will defy competition, and that public conviction will eventually bear the Managers out in this conclusion; it being well known that the capacity of the Lehigh at the proper summit is at all times fully competent to feed a canal for purposes of Navigation both ways. It is believed too that a practicable and advantageous route for a Turnpike Road is afforded from the east side of Mauch Chunk to the Susquehannah at Wilkesbarre, a distance of about 38 miles.

It is the intention of the Managers at an early period to open to purchasers their many important Water-powers on the line of the Canal, particularly those at South Easton, where they have the whole power of the Lehigh under a head of 23 feet—for this purpose they await only the certainty and permanency of the Navigation below them.

The time we think, is fast approaching when Anthracite coal will be generally used in Steam Boats, it being already advantageously consumed by Steam Engines for manufacturing purposes—when this period arrives, and its general introduction for culinary uses takes place, the amount by these modes of consumption must be greatly increased, in the supply of which, we may reasonably anticipate, our coal will form a considerable proportion.

In the transactions of the Natural History Society of Northumber-

land, Durham, and New-castle, it is stated that the quantity of iron annually manufactured in Wales is about 270,000 tons, of which about three-fourths is made into bars, and one-fourth sold as pigs and castings. The quantity of coal required for its manufacture, including that used by workmen, &c. will be about five and a half tons for each ton of iron; the annual consumption of coals by the iron works will, therefore, be about 1,500,000 tons. The quantity used in the melting of copper ore imported from Cornwall, in the manufacture of tin plate, forging of iron for various purposes, and for domestic uses, may be calculated at 350,000 tons; which make altogether the annual consumption of coal in Wales 1,850,000 tons. The annual quantity of iron manufactured in Great Britain is 690,000 tons.

According to an official statement, published in 1828, the Eastern section of the Morris Canal, passes by the Towns of Newark, Bloomfield, Patterson and Dover, where there are large manufacturing establishments, which are daily increasing in extent. There are also fifty-four iron furnaces and forges, already in operation—besides which there are thirty-nine forges and furnaces in the neighborhood which have ceased to operate for want of fuel; these will undoubtedly be revived, when they can be supplied with Lehigh Coal.

That these prospects are not merely ideal, the Managers have the satisfaction of informing the Stockholders, that they have agreed upon the terms of a Contract for the sale of fifty thousand Tons of Coal to be delivered at Mauch Chunk, and to pass by the route of the Morris Canal.

Thus a new and extensive source of trade will shortly be opened in a region of country, which excludes competition, and presents advantages too apparent for detail.

In reviewing the present state of our corporate concerns we feel justified in expressing our belief that a period is rapidly approaching when the vast importance of the Lehigh Navigation as an unfailing and competent means of communication between the Susquehannah and Delaware will be fully appreciated—that it will contribute largely to the revenue of the State in Tolls to the Delaware Canal, and that it will eventually repay in Dividends the patriotic exertions and patient waiting of its Stockholders.

And although many vexatious delays have heretofore occurred, the Managers look with confidence to an approaching and early period, when their just expectations shall be crowned with full success.

Much interesting matter will be found in the accompanying Report of the Acting Manager at Mauch Chunk—and the fiscal affairs of the Company are developed in that of the Treasurer.

By order of the Board of Managers,

JOSEPH WATSON, PRESIDENT.

January 6th, 1831.

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The Acting Manager Reports,

THAT the Stockholders must attribute their not receiving a dividend the last year solely to the circumstance of the Delaware and Morris Canals not being finished; for although the market for Anthracite Coal is yet of a limited character, our facilities in getting to market would have been so much increased by having the use of those canals, that we could have realized a sufficient profit to afford a dividend on the business of the past season. From the present state of those works, we cannot be disappointed in their completion early in this year. I am credibly informed that the Morris canal is ready for use excepting some of the mechanical work at a few of the inclined planes. An intelligent friend has informed me, that a visit to the inclined planes in that canal completely dissipated all his former doubts and convinced him of their entire efficacy. He stated that the planes caused little or no detention, as the boats had completed the passage on them in nearly the same time that the horse walked the same distance. The Pennsylvania Delaware Canal has had the water in about half its length, and all the contracts along it were considered as completed, but a few of the sections proved to have been badly constructed, and required heavy repairs. A considerable portion of the bad work has been overhauled, and I believe the superintendent has no doubt we shall have the use of the canal in all the ensuing spring. Our own canal is in excellent order and has proved its superiority over ordinary canals, as was anticipated by its friends. We have employed during the past fall two boats from the Delaware and Hudson Canal which carry 27 tons each, and the owner of them declares he can draw them both, side by side, in our canal with one horse as easily as he could draw one of them through a narrow canal and consequently at about half the expense per ton.

The following freight was transported on the Lehigh Canal in 1830:—

Coal,	-	-	-	-	42,225
Lumber,	-	-	-	-	2,285
Grain,	-	-	-	-	242
Flour,	-	-	-	-	1,510

Whiskey,	-	-	-	135
Iron,	-	-	-	303
Lime stone,	-	-	-	2,934
Slate,	-	-	-	400
Sundries,	-	-	-	191
				—
Total,				50,225 tons.

We have quarried and transported on our Rail Road the past season, 43,370 tons of Coal, and shipped 41,750, the balance being disposed of and remaining at Mauch Chunk. The demand on the forest for the year amounted to 6,500,000 feet of lumber, from which 11½ miles of arks were constructed.

I have the pleasure to state that we have so far improved in the economy of getting Coal to market, as to save forty cents per ton from the cost of 1829.

Our stocks on hand at Mauch Chunk and vicinity consist of
2,278,000 feet of Lumber,

1,580 tons of Coal at Mauch Chunk,
500 do. do. along the Canal,
500 do. do. at South Easton,
308 Coal wagons,
20 Mule wagons,
107 Mules,
40 Horses,
15 Oxen,
17 Canal boats.

500,000 tons of Coal uncovered at the great mine, and ready for quarrying. This stock will enable us to meet any sudden demand that may be required for a new market.

In the construction of the Canal, portions of land belonging to one hundred and fifty proprietors along the line have been occupied. The consequent claims for damage have been settled, except in eighteen cases, principally by purchases of the property, though in some instances by paying the claim and taking releases. The unsettled cases will not in my estimation of their just value exceed \$10,000. I feel it a matter of much gratulation, that this most unpleasant and vexatious part of the business, is so far accomplished, and that the Company now stand as proprietors along the line of Canal, instead of intruders as was the case until these settlements were effected.

I may now state to the Board, that our general position for business is such, that very little special arrangement is necessary to bring to market 100,000 tons of Coal, the quantity they have directed me to procure for the next season, provided we have the use of the Canals, between ours and the tide. One month's good working weather will be sufficient to make the necessary preparation.

I have, in compliance with the orders of the Board, converted the three combined locks near Mauch Chunk (which were originally made for a steam-boat navigation, one hundred and thirty feet long and thirty feet wide) into two separate locks, like the others on the Canal, so that now all our locks are single, with a basin or portion of Canal between them, and each is capable of passing a boat loaded with one hundred and forty tons up or down in an average of five minutes—or a pair of Delaware boats of seventy tons each can pass in the same time. The capacity of the Canal is therefore eight hundred and forty tons per hour, being as great as can be wanted for all the freight that will seek a market from the Lehigh, as well as for all the freight that will ultimately pass this route from the Susquehannah. This, it must be recollect, is the only route north of the Blue Mountain, where an uninterrupted canal communication, with abundance of water, can be made between the Delaware and Susquehannah.

My conviction is that our great Coal mine or quarry will prove to be a vein of coal about sixty feet thick between the top and bottom slate, and that its extent will bear out my last Annual Report. Since that Report I have examined our coal field in and about Room Run, where that stream breaks across the coal formation, and have had the good fortune to lay open a series of veins, of unparalleled extent, and of the following dimensions, viz: 28, 5, 5, 10, 19, 39, 5, 12, 15, 15, 50, 20, 11, and 6 feet: making the whole number of veins opened, 14, and the whole thickness measured at right angles with the veins, 249 feet. The width of the coal basin at this place, north and south, exceeds half a mile, and the bearing of the veins lengthwise, is south 88° west. If we allow 60 cubic feet of these veins to make a ton of coal in market, after leaving enough for piers, waste, &c. they will give four tons of coal to each superficial square foot (counting the whole as one vein)

or 10,560 tons for each foot lengthwise of the coal basin, and consequently 55,756,800 tons for each mile, and allowing our demand to be one million of tons each year from these mines, one mile would last more than fifty-five years. The part of the coal basin belonging to the Company extends 10 or 12 miles.

Agreeably to the directions of the Board, I have laid out a line for a Rail Road from the Mauch Chunk Pond to the Room Run mines to be graded as follows, viz:

At the landing the Rail Road will commence at the height of 12.70 feet above the water in the Pond.

From the landing to the foot of self-acting plane

No. 1, - - - - -	13.35	feet rise in 1450 feet.
No. 1 self-acting plane, - - -	120.11	" " 1200 "
From No. 1 to No 2 self-acting plane, 194.25	" "	21004 "
No. 2 self-acting plane at Room Run, 118.00	" "	1200 "
No. 3, self-acting plane to 28 foot vein, 56.00	" "	800 "
Total rise, - - - - -	414.41	" " 25.654 "

The whole of the road from the Coal mines to the landing is descending. In the self-acting planes, the descending wagon will bring back the empty one. The intermediate road is graduated from 10 to 12 inches descent in 100 feet, this being considered the lowest grade on which a loaded wagon will descend by gravity, and therefore the most favorable one that can be devised when the freight, as in our case, is all one way. This road I hope to finish next spring in time to save its cost in the transportation of the year, provided the market will take as much Coal as we can send down it the ensuing season.

We are therefore in a good state of preparation, upon the completion of the Delaware and Morris Canals, to supply the market on tide with as much anthracite Coal as it may require, and that of a quality that latterly has become the boast of our neighbors, and long since has given full satisfaction to our customers.

We have now transported on our Rail Road (of nine miles in length) upwards of 150,000 tons, and we have varied the velocity of the wagons from three miles to thirty miles per hour. The experience which I have thus obtained, confirms me in the opinion that it will cost more

per ton per mile to go twenty miles or more per hour, than to go five miles an hour, notwithstanding the experiments which have lately caused so much excitement on the Manchester and Liverpool Rail Way.

I have also in obedience to the orders of the Board surveyed, in part, two situations for public Town Plots. One of them at the mouth of Room-run, called "Nesquihoning" lies sufficiently near the mines for the convenience of the miners for centuries. It is 3400 feet from the heart of the coal region on Room-run, 40 miles from the town of Catawissa, on the Susquehannah river, and 30 miles from Berwick, and will form one of the nearest markets for those places. As only one summit would intervene between this place and Catawissa and the distance but forty miles, I think it presents the most favorable route which has been offered to the public for a rail road to connect Catawissa or Northumberland with the waters of the Delaware. I have had the ground levelled from our Rail Road to the summit of the Nesquihoning valley and find the rise 254.52 feet and distance 46,600 feet or rather less than 9 miles and found no difficulty to the construction of a road. Water power can be obtained on the town plot for extensive manufactories, so that the location not only accommodates our business but has great public advantages.

The town called East Mauch Chunk is located on the Company's land in what is commonly known by the name of the "Lehigh Kettle" on the East side of the Lehigh and about one fourth of a mile above Mauch Chunk, at the head of the great navigation for 140 ton boats and the foot of the contemplated mountain navigation from the Susquehannah for boats of 70 tons—and directly opposite to the landings of the Company for the Coal from the Room Run mines. It is the nearest ground to those landings which is suitable for an extensive settlement and has a favorable surface, for this purpose, to the extent of half a mile in width by a mile in length. On the upper corner of the plot we can use the River Lehigh with a fall of 20 feet for mill and manufacturing purposes, and the sterility and roughness of the upper parts of the Lehigh will effectually prevent the future supplies of water for these purposes being cut off by the clearing and improvement of the surround-

ing country. This town will be 4 miles from Nesquihoning, 32 from Berwick, 44 from Cattawissa, about 38 from Wilkesbarre, and 46 by the canal from Easton.

When it is recollect that 100,000 tons of coal will give employment to 1000 working men in all the branches connected with the coal business, and that these with their families, will require the aid of professional men, merchants and mechanics of all descriptions it will not be considered extravagant to say that the location and advantages of East Mauch Chunk are such as must insure its speedily becoming one of the largest inland towns in the state, and that it will furnish a nursery from which the Coal business may derive as many hands as may be required.

The completion of the Canal and the location of the rail road and landings have removed the obstacles which have hitherto prevented the Company from disposing of any of their land to the public, as we can now ascertain what parts of the property may be sold without interfering with the extension of the coal business. The Board may therefore now safely offer to the enterprize of the public the lots in the towns of Nesquihoning and Mauch Chunk, and invite the settlement there of merchants, mechanics, manufacturers, professional men, and laborers of all descriptions, to all of whom the situation offers peculiar advantages, and thus confine the attention of the company to a simple unspeculative coal-business.

All which is respectfully submitted,

JOSIAH WHITE, *Acting Manager.*

PHILADELPHIA, 12 mo. 31, 1830.